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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,155	02/25/2002	Masaharu Tomobe	072982-0236	8138

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EXAMINER

BRINEY III, WALTER F

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,155

Applicant(s)

TOMOBE, MASA HARU

Examiner

Walter F Briney III

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1, 5, 9, 13, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger et al. (US Patent Application Publication 2002/0091951) in view of Bingley (US Patent 4,631,470).**

Claim 1 is limited to *an internet protocol (IP) telephone*. Jaeger discloses a device for remote power feeding of a terminal in a telecommunication network. See Abstract. As seen in figure 2, a concentrator (3) contains a remote power feeding unit (31) that supplies DC power to remotely located terminal (5_N). Jaeger discloses that each terminal is a telephone operating in voice over IP mode, i.e. each terminal is an *IP telephone*. As can be seen figure 2, each telephone has *input connection* to a network link (L). Since each telephone operates in the IP mode, it inherently receives a *digital component*, which is received by transformer (40). The RPF ^{unit} (31) also provides a *current component*, which is coupled from the center-taps of transformers (40) and (41). Therefore, the transformer (40) is a *splitter*. While not shown, the terminal inherently includes *telephone circuitry* for audio input/output. Figure 2 further depicts power circuitry coupled to the center-taps of *splitter* (40), i.e. *a power source circuit*. The power source circuitry includes an *input capacitor* (21) and a *DC/DC converter* (22).

Art Unit: 2644

Therefore, Jaeger anticipates all limitations of the claim with the exception of a *CPU* and *an input current limiting resistor*.

The RPF unit (31) of Jaeger rapidly switches from a no power-feed state to a power-feed state based on the size of capacitor (21) see steps (101) and (105) of figure 4. While the output current is limited in accordance with step (108), in-rush current caused by the sudden application of unregulated DC voltage to the link (L) can cause damage to not only the RPF unit (31) but to the power circuitry of terminal (5_N) as well. This is a well-established problem in the art as evidenced by Bingley. In particular, Bingley indicates in column 2, lines 3-39 that in-rush DC current caused by sudden closing of a switch contact can damage components. In an attempt to mitigate this problem, Bingley teaches inserting an input current limiting resistor (18) in series with regulating power supply circuitry (22). See figure 1. The value of the resistor (18) is varied in accordance with the output of a CPU (42). Note the input capacitor (21) of Jaeger corresponds to the input capacitor (24) of Bingley.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the variable resistor and CPU as taught by Bingley for the purpose of mitigating the damaging effects of in-rush current.

Claim 5 is limited to *the IP telephone in accordance with claim 1*, as covered by Jaeger in view of Bingley. As can be seen from the basic current in-rush limiting circuit of figure 1, a transistor (30) is provided in parallel with the resistor (18) in order to remove the resistor after the in-rush current has substantially dissipated, i.e. *limit*

Art Unit: 2644

removing means. See column 4, lines 63-67. Therefore, Jaeger in view of Bingley makes obvious all limitations of the claim.

Claim 9 is limited to *the IP telephone in accordance with claim 5*, as covered by Jaeger in view of Bingley. Figure 1 clearly depicts that the limit removing means is a switching transistor (30) in parallel with the resistor (18). Therefore, Jaeger in view of Bingley makes obvious all limitations of the claim.

Claim 13 is limited to *the IP telephone in accordance with claim 9*, as covered by Jaeger in view of Bingley. Bingley teaches a transistor (i.e. a *driving transistor*) (figure 3, element 258) that controls the bias to transistor 30. The *driving transistor* is controlled by the voltage across capacitor 226 (i.e. a *delay circuit from said DC/DC converter*) (column 9, line 27-column 10, line 4). Therefore, Jaeger in view of Bingley makes obvious all limitations of the claim.

Claim 17 is limited to *the IP telephone in accordance with claim 9*, as covered by Jaeger in view of Bingley. Bingley teaches a power supply with a bypass transistor (figure 3, element 30). The transistor is timed to turn off based on voltages measured by control units throughout the device (e.g. transistor 258). The entire device constitutes a CPU (i.e. a *central processing unit (CPU)*, said CPU determining control timing for turning said switching transistor on or off). Therefore, Bingley anticipates all limitations of the claim.

Claim 21 is limited to *the IP telephone in accordance with claim 1*, as covered by Jaeger in view of Bingley. The configuration of Jaeger as modified by Bingley clearly suggests that a DC current fed through resistor (18) charges the input capacitor (24) of

Art Unit: 2644

Bingley ((21) in Jaeger) when the RPF unit of Jaeger detects the presence of the *IP telephone*, i.e. *during power-up of said IP telephone*. Therefore, Jaeger in view of Bingley makes obvious all limitations of the claim.

2. **Claims 3, 7, 11, 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger in view of Bingley and further in view of the applicant's admitted prior art.**

Claim 3 is limited to *the IP telephone in accordance with claim 1*, as covered by Jaeger in view of Bingley. Both Jaeger and Bingley describe power supplies with input capacitors, but neither mentions the sizing of any particular components. However, it is clear that the input capacitance of Jaeger is set by current IP telephone standards. In any case, Jaeger in view of Bingley makes obvious all limitations of the claim with the exception *wherein said input capacitor has a capacity of about 100 μ F*.

The applicant has stated that in general there are at least two types of IP telephones on the market (disclosure, page 2, third paragraph). Of the two, specification B requires that the input capacity of the phone requires an input capacity between 47 and 470 μ F (page 3, first paragraph). The applicant does not specify that a capacitor of about 100 μ F provides an advantage within the listed range.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a charging capacitor value of 100 μ F as taught by the applicant's admitted prior art for the purpose of allowing the general-purpose power supply of Bingley in view of Nelson to power an IP-telephone, which provides the advantage of low-cost communication.

Claims 7, 11, 15, and 19 present those limitations newly presented in claims 5, 9, 13 and 17 - as covered by Jaeger in view of Bingley - respectively, and are rejected for the same reasons in addition to those reasons presented in the rejection of claim 3 of which claims 9, 13, and 17 depend.

3. **Claims 2, 4, 6, 8, 10, 12, 14, 16, 18, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger in view of Bingley and further in view of Nelson et al. (US Patent 5,973,942).

Claim 2 is limited to *the IP telephone in accordance with claim 1*, as covered by Jaeger in view of Bingley. While Bingley teaches a *DC/DC converter (22)*, there is no suggestion as to how to power it. Therefore Jaeger in view of Bingley makes obvious all limitations of the claim with the exception of *an input voltage sensor circuit for monitoring an input voltage to said DC/DC converter*.

Nelson teaches a similar DC/DC converter to that of Bingley, however, Nelson includes circuitry for deriving power in order to operate the PWM circuitry. Nelson proposes draining current from the input capacitor (24 in Bingley, 21 in Jaeger) at a low level, but the activation of the controlling switch Q3 does not occur until an *input voltage monitor* determines that the input capacitor is properly charged (i.e. *an output from said DC/DC converter being delayed according to a result of the monitoring by said input voltage sensor circuit*) (column 5, lines 43-56).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the circuitry to power the PWM circuitry as taught by Nelson for the purpose of providing power to the PWM circuitry wherein the method of Nelson provides

the advantage of further reducing inrush current during startup by isolating the PWM circuitry from the input capacitor.

Claim 4 presents those limitations newly presented in claim 3, as covered by Jaeger in view of Bingley, and is rejected for the same reasons in addition to those reasons presented in the rejection of claim 2 of which claim 4 depends.

Claims 6, 10, 14 and 18 present those limitations newly presented in claims 5, 9, 13, and 17 - as covered by Jaeger in view of Bingley - respectively, and are rejected for the same reasons in addition to those reasons presented in the rejection of claim 2 of which claims 6, 10, 14, and 18 depend.

Claims 8, 12, 16 and 20 present those limitations newly presented in claims 5, 9, 13, and 17 - as covered by Jaeger in view of Bingley - respectively, and are rejected for the same reasons in addition to those reasons presented in the rejection of claim 4 of which claims 8, 12, 16, and 20 depend.

Response to Arguments

Applicant's arguments, filed 01 November 2004, with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 2644

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Application/Control Number: 10/081,155

Page 9

Art Unit: 2644

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SINH TRAN
SUPERVISORY PATENT EXAMINER

WFB
4/21/05